

## NOTES ON COOERWULL, HAZELBROOK AND WOODFORD FOOTBRIDGES

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### BACKGROUND

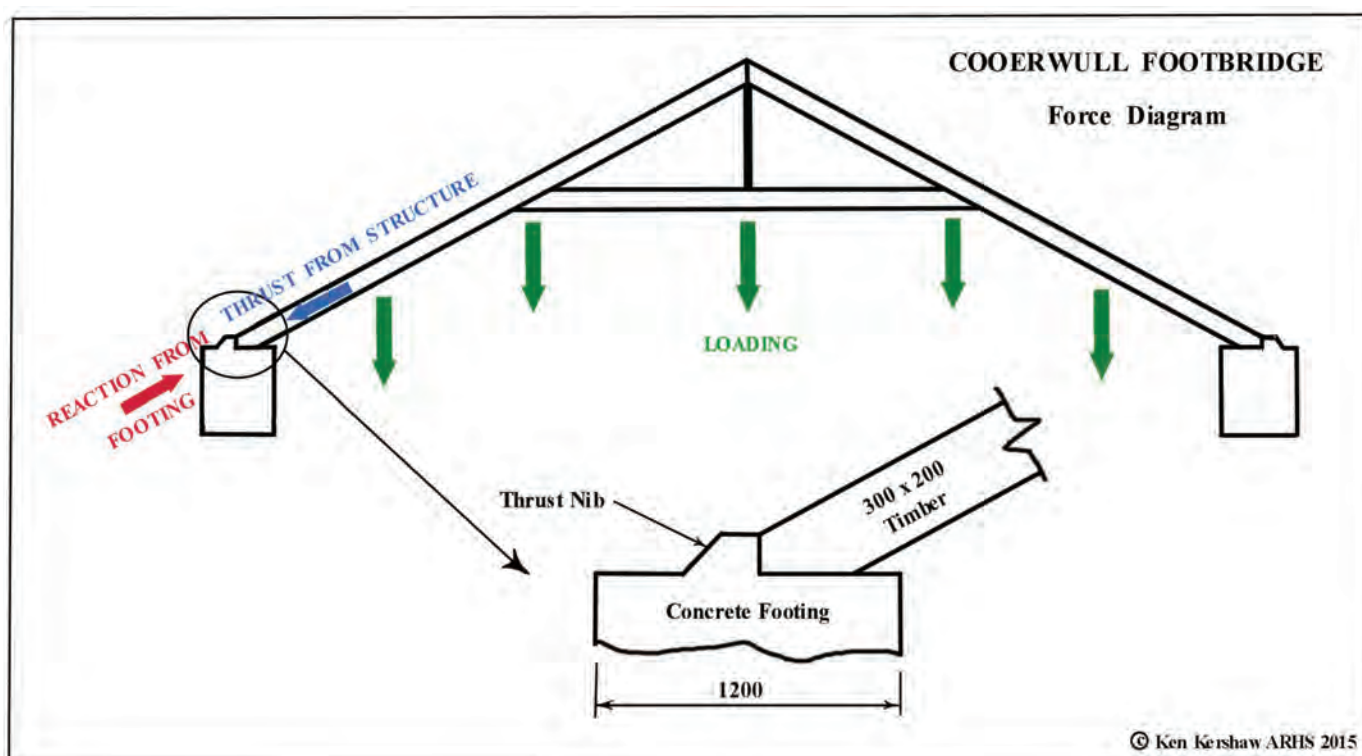
The article about Coerwull Station in the July *ARH*, and in particular its unusual timber pedestrian footbridge, has raised some interest. It was noted that the bridge had been refurbished and re-erected near Top Points on the Zig Zag Railway. Unfortunately, the photo accompanying that letter did not portray the entire structure including the supports on each side. These will be considered later in this article.

As Graeme Kirkby states in his letter (*ARH* November 2015), similar 'A' frame style structures were also built at Woodford and Hazelbrook. Plans held in the ARHS Railway Resource Centre hard copy collection, recently sorted and catalogued, make it clear that all three bridges were adaptations of the same imaginative design. The eastern bridges were designed in 1920 according to the plans and presumably erected as Singleton and Wylie have stated in 1923. The plans do include a later annotation that the Woodford bridge was dismantled in 1956, although another sketch plan notes its destruction in 1978 by bushfire and this seems consistent with Graeme Kirkby's assertion that it was still in place at least until 1967.

### THE COOERWULL BRIDGE

The adjacent design drawing (p23) shows the Coerwull Bridge. It does not include the overhead bracing between the apexes of the two 'A' frames which has been photographically confirmed as being in existence at a later time at Coerwull, and as it remains at Zig Zag. This may have been a late design change, or provided subsequent to initial construction. The drawing shows substantial concrete substructures, measuring approximately 2400mm parallel to the track and 1200mm transversely, supporting each side of the bridge.

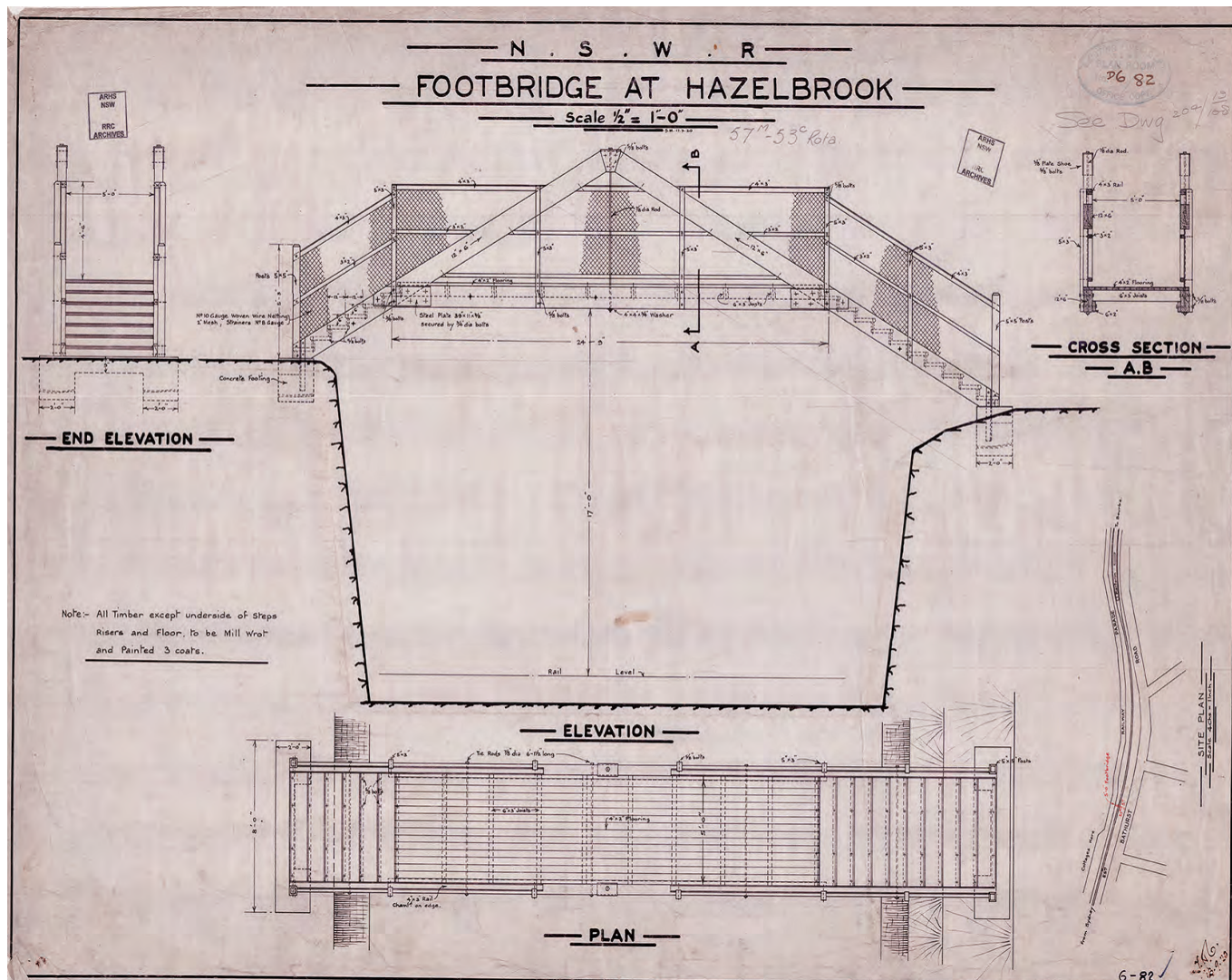
As Dr Stuart Sharp states, the Coerwull structure can be considered as a type of arch, and is shown diagrammatically below. The loading applied at the ends and center of the horizontal part of the structure and by the bridge's stepways, is transmitted to the substructure by the inclined members where it is resisted by an equal and opposite force provided by the concrete foundations. Although, under some circumstances, the horizontal part of the structure may also be capable of exerting a restraining force to the inclined members, the relatively light nature of the connecting plates and bolts suggest that this was not the designer's intention. Interestingly, the connecting steel plates at



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NSW Railways drawings for the Hazelbrook footbridge. ARHSNSW RAILWAY RESOURCE CENTRE

Zig Zag have been significantly redesigned compared to the original drawing, and achieve a much more positive connection to the inclined members.

See drawing on page 23.

## WOODFORD AND HAZELBROOK BRIDGES

Drawings for the Woodford and Hazelbrook are presented above and on page 25. Although the Woodford and Hazelbrook bridges had longer inclined members due to different topography, and included short piers to provide vertical support, there is no real difference in the structural design of the three bridges.

In 1957, as part of the Western Line electrification project, safety screens were erected at each side of the structure over the 1500v traction wires to deter people tempted to dangle things onto the live wires. At the same time steel bracing was added to the underside of the structure to provide bracing against swaying, and this latter steelwork was retained when the structure was relocated.

## COOERWULL BRIDGE TODAY

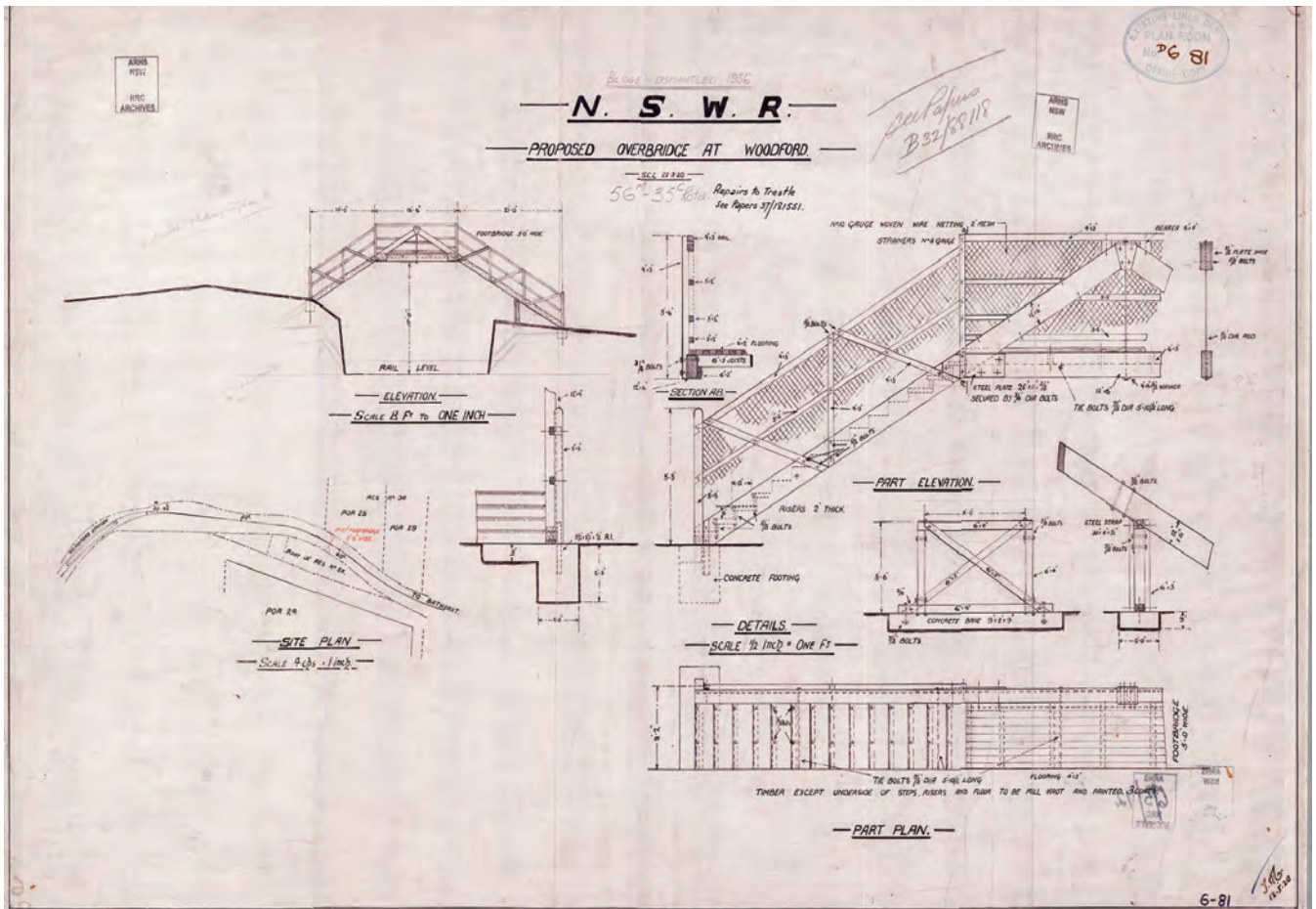
When it was decided to replace the original Coorwull bridge, a 1995 drawing shows how the entire original bridge was to be lifted in one piece and placed longitudinally on a new substructure on the Down side of the track, surrounded by a fence. Presumably it must have been conceded as having historic value. Late in 2002 the structure was again relocated to Top Points on the Zig Zag Railway and this was a far more imaginative way to preserve and display it.

While the photo in the October *ARH* may suggest that in its new location the bridge is supported only by lightweight piers, the substructure actually comprises substantial brick abutments surmounted by concrete caps. Thus structurally the bridge is still the same form of arch as it was originally.

## CONCLUSION

Although claims of uniqueness or priority can always be argued by introducing the qualification 'of its type', the three footbridges on the Western Line should be considered as substantially the same.





NSW Railways drawing for Woodford footbridge. ARHSNSW RAILWAY RESOURCE CENTRE



The former Coerwull footbridge relocated to the Top Points Station on the Zig Zag Railway showing brick abutments in August 2015.  
SHANE O'NEIL